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was much impressed with the names given to some of the plantations on the island; such as, "Anna's Hope, Peter's Rest, Judith's Fancy, Parasol Hill, Jealousy, Rustup Twist, Eliza's Retreat." They suggested a romantic early history, and they recalled the story of Paul and Virginia and their lovely tropical island on the opposite side of the globe, where many of the same trees and fruits and ornamental plants must have grown as those on Santa Cruz. Many of these local names are perpetuated on the labels of collections in the United States National Museum, especially among the specimens collected by Mrs. Ricksecker and her sons.

On my taking leave of Mr. Roberts he gave me a few bulbs from his old garden, including those of a white spider lily (*Hymenocallis caribaea*), a handsome red amaryllis (*Hippeastrum equestre*), and the beautiful little *Zephyranthes rosea*. Although these were in bloom at the time, they were not injured by being torn up. I dried them and at the end of the cruise took them home, where for many years they continued to bloom in my mother's garden, though they had to be taken up each year and protected through the winter.

The following evening we weighed anchor and steamed to the southeastward, bound for the French Island of Guadeloupe.

Roughing it to the Yosemite

H. HARWOOD TRACY

Many of the members of the Fern Society who live within easy reach of the woods or the mountains may find it hard to realize the feeling that a lover of ferns must have when he is situated so that he can not see a fern growing in its native haunts without a trip of over 35 miles, and that trip over hard roads. This has been my experience for the last two years, and so it was with

a great deal of anticipation that I began to make my plans for a camping trip into the Yosemite and possibly the higher Sierras. I had had the good fortune of having visited the wonderful valley once before, but that time I was not permitted to do the clambering around that a fern collector so enjoys. But upon this trip I planned to go in such a way as to secure the most outdoor recreation possible and to see the mountains as intimately as any one could in a short two weeks.

In company with three of the boys of our high school I set out on the 29th of June with a "light pack." As we started out just at sunrise we certainly made a spectacle; two little mountain horses, a one-seated light road wagon, our "grub box" nailed on the back of the one seat, a couple of blankets folded up for a cushion for the grub box, two boys on top of the box, my botany press in front, which with a pack saddle made a convenient place for our feet, and we were off.

The first thirty miles were mainly uninteresting to us, first past the various fruit orchards, peaches and apricots just beginning to ripen, then past the wide expanses of green alfalfa, on the straight road to the mountains, the road ever in front of us without a turn. Past the wheat fields, first in quarter sections then in full sections and later the many sections where the thirty-six mule team threshers and reapers were at work. Twenty-nine miles without a hill to climb, and then we met our first hill, only a little one, but it looked steep to the boys, who immediately jumped off to lighten the load; many a worse one did we all ride before we reached the Yosemite.

Reaching the little town of La Grange we put our horses in the stable and ourselves in the hotel, for we were not anxious, especially myself, to try our hand at cooking; I was to do that part of the camp work. After eating a hearty dinner we started to walk to the La

Grange Dam, which is the beginning of the Turlock and the Modest Irrigation districts, together making one of the largest tracts of irrigated land to be found in the United States. On the way there, I was to see my first ferns. The very common gold-back, *Gymnogramma triangularis*, was at this altitude (600 ft.) and season dry and curled up. Passing along the banks of the Tuolumne River up towards the dam, I came across *Azolla filiculoides* growing abundantly at the base of a spring. The plants literally covered the pool of water, and that seeming not to be enough they encroached on the ground, growing in the damp soil around the spring for a distance of many feet. The plants were in excellent condition both as to abundant fruiting stages and luxuriance of growth.

Under the protection of a large rock near the dam, where the wind carried the spray, I found several plants of *Gymnogramma triangularis viscosa*. I have seen this plant growing near San Diego, Calif., but I was surprised to find it here and later in the Yosemite Valley. *Pellaea ornithopus* and *Woodwardia radicans* were also seen growing near the falls. One other little fern was also found here, *Pellaea densa*. This fern I had expected to find up in the mountains, but I had hardly expected to see it growing at this low altitude.

After a survey of the irrigation flumes and dam we hurried back to our wagon and started on. The country became hilly and the roads winding, but on the hilly plateau only vast fields of wheat were found, or if the country was too hilly, with frequent outcrops of rock strata, the land would be fenced in for pasture use, now abandoned for the greener country farther up in the mountains.

Our horses had traveled 32 miles in the morning, and the hilly country soon showed them to be tired, so we pitched our camp, which consisted of unrolling our blankets and getting a fire started under a pot of coffee

and a pan of beans. Sleep was rather intermittent this first night out, for we were not yet in the land of hemlock or even pine boughs for beds. Securing an early start the next morning we hurried along and slowly began to ascend, and with the ascent the hills became more and more covered with trees. First only an occasional oak, then larger and larger groups of them together with buckeye bushes. Before noon we had passed thru a few groves of jack pines, and we saw ahead of us chain after chain of low mountains (3,000-4,000 ft.) covered with a good forest growth.

Arriving at the old-time town of Coulterville about noon, we rested for a while, and then almost leaving civilization behind we took the old Coulterville road for the Yosemite. Occasionally we found a little water in the creek beds, and the country became more and more mountainous, but ever with higher mountains ahead. A few specimens of the gold-back were seen along the road as well as the "tea fern," *Pellaea ornithopus*, and when we found a cool shaded spot where the water was abundant, there was *Woodwardia radicans*, and the hill-sides were covered with the common *Dryopteris rigida arguta*; but little else did we see in the fern line until we had reached the Yosemite. I have disregarded one fern, so common and so abundant did it grow, *Pteridium aquilinum pubescens* Underw. The plants of this were so much easier to gather than boughs, that we made our beds of them each night.

The afternoon of the third day we reached the highest point on this road, 6,000 feet, and by evening we had reached the Big Meadows, a point 17 miles from the center of the Valley. From this point into the Yosemite was a gradual down grade with the exception of the last two miles, when you drop between 1,500 and 2,000 feet. And such a road. Almost sheer rock, where even the sliding of the wheels will not hold your wagon

By 8 o'clock we had successfully descended this grade, and there, only a few feet below us rushed and leaped the Merced River. At this point I found another specimen of the silver back, *Gymnogramma*, and also *Cheilanthes gracillima* and *C. Fendleri*. *Pellaea ornithopus* was also abundant.

By noon we had reached our final destination and had pitched camp. On the following morning we took the trail for Glacier Point. The so-called "long trail" being 14 miles in length, most of the tourists ride mules or horses, but I had had experience that way and I decided I wanted to hurry at one time and stop at another, and according to my experience the former, at least, was not possible with a mountain mule. Taking what is known as the "ledge trail" to the foot of Vernal Falls, I found *Polystichum munitum* growing very abundantly. In a secluded corner, where the spray from the falls furnished plenty of water, was a beautiful grotto filled with *Adiantum pedatum*. Prof. Hall, in his admirable little book, *Flora of the Yosemite*, says that this fern once was the most common of any in the valley, but the admiring tourists so uprooted the plants that they are now found only in a few places well out of the reach of the easily wearied pleasure seeker. I am glad that there are these few places, three of which I found. Beside the one already mentioned there is one, the largest that I saw, upon the left as one is climbing the trail that leads to Tenaya Lake, ascending the mountain just above Mirror Lake. One visiting the Yosemite would be well repaid to take this trail up far enough to gain a view of this lovely grotto. It will be there when you go, for it is well out of reach of any but the most daring. Another smaller group was seen on the "lightening" or "ledge trail" to Glacier Point. This grotto is well guarded, for the authorities of the park will not allow this trail to be used with their permission, since

two young men lost their lives while climbing it. However this may be and while it is not as easy as the other trails in the park, yet if you are a fern lover and can only take one trail, take this. The reason for this advice I will give later.

Pellaea densa and *P. Bridgesii* were found along the trail to Glacier Point. The last named one, like others of the genus, seems to delight in being choked or in living upon a very meager diet. Rocky cliffs with only a crevice seem to be its especial joy. This fern has always been a trial to me, for I can not make a pressed specimen look neat. The little pinnae are so brittle, and when found are often so twisted out of natural shape that it is a difficult task to get them into the press in any kind of shape. Mr. L. S. Hopkins had asked me to watch out for *Filix fragilis* and to collect some for him at various altitudes, watching for the highest altitude. I had thought it confined to altitudes between 2,500 and 6,000 ft., but on this trip I found it much higher, growing above Glacier Point and up toward Sentinel Dome at 7,900 ft. Upon Sentinel Dome, where the wind is so strong that the single pine tree grows to the southeast instead of upward like the rest of its kind, we found *Cryptogramma acrostichoides*. The little fern has always interested me, for while there are other dimorphous ferns accredited to California and occasionally found, this little fern is so abundant in its territory that it is a pleasure to meet it.

Polypodium species, which are abundant in so many places, seem to have left out the Yosemite district. *Polypodium californicum* grows very abundantly in most mountainous regions of the State south of San Francisco, but not a specimen have I seen in the Yosemite region, and the common eastern *P. vulgare* occurs rarely in California. It has been found, so far as I know, in only one place in the Yosemite, up high in a crevice

of rock at the foot of the Yosemite Falls. Four years ago I gathered a few at this place, and this year I found even less growing there, so I left them, just noting that they were there. Prof. Hall, in *Flora of the Yosemite*, speaks of collecting this fern in this same place.

One trip, which lost us two days of time and which resulted in a disappointment, was our journey to Lake Tenaya. It was a disappointment in that I expected more than we realized, and in that we were driven out by those "demons" of the high mountain regions, the mosquitoes. I think we might have stood them, but the horses could not protect themselves and were nearly crazed. One horse was white when traveling in other places but in the Lake region she became very dark gray, so completely covered was she by the mosquitoes.

Upon this trip we reached our highest altitude, 8,900 ft., and just on one side of this point was growing most luxuriantly *Cryptogramma acrostichoides*, and with it *Filix fragilis*. No other fern of interest was seen on this trip unless it was *Pellaea ornithopus-Wrightiana*. I run these two names together, for I certainly saw almost every stage intermediate between the types of both, and some bordered on the *P. brachyptera*. In reading Prof. Hall's account of the same species I was glad to note that he had felt the same way, that it is impossible to draw a line between the two species, at least as they are found in the Yosemite.

Now I want to tell why I advised anyone who had only a short time in the valley to take the "ledge trail" to Glacier Point. After looking over Prof. Hall's *Flora*, I found that he had collected *Woodsia scopulina* upon this trail. It was my last afternoon in the Yosemite, but I did want to see that fern. The trail is very indistinct in many places, as it leads over sheer rock for hundreds of feet at times. Once I thought that surely I was climbing the Alps, as with knees pressed against

the sides of a crevice of the rock and fingers clutching a half inch notch in the side of the rock I worked my way up to find myself many feet to one side of the trail and nothing else possible but to go back the way I had come. One thing rewarded me for the sore knees and raw finger tips, the finest specimens of *Cheilanthes gracillima* I ever saw. Many of these specimens measured the limit set by Underwood, and some exceeded it, stipes 11cm. and fronds 14cm. long.

Without going into further detail of this climb let me enumerate the ferns seen or collected on this climb, which consisted of a rise of 2,500 ft., almost straight up—but with only a few very dangerous places if you can keep to the trail.

The ferns are as follows: *Pteridium aquilinum* (L.) Kuhn, *Pellaea Bridgesii* Hook., *P. densa* (Brack.) Hook., *P. ornithopus* Hook., *P. Wrightiana* Hook., *Filix fragilis* (L.) Underw. *Adiantum pedatum* L., *Cheilanthes myriophylla* Desv., *C. gracillima* D. C. Eaton., *Cryptogramma acrostichoides* R. Br., *Polystichum munitum* (Kaulf.) Underw., *Dryopteris rigida arguta* (Kaulf.) Underw., *Asplenium filix-foemina* (L.) Bernh., and the object of my climb, *Woodsia scopulina* D. C. Eaton. Fourteen distinct kinds and many of them the finest collected upon the whole trip. Wouldn't that entice you to make the trip? It would me, again.

Although I was unable to reach the very highest Sierras and although we were driven back from Lake Tenaya, yet with my twenty-one species and varieties of ferns and the many good times I feel well repaid for my trip.

CERES, CALIF.